



The quest for safe drinking water: An example from Guinea-Bissau (West Africa)

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Abstract:

While humans require water for life, one-sixth of our species lives without access to safe water. In Africa, the situation is particularly acute because of global warming, the progression of the Sahara desert, civil unrest and poor governance, population growth, migration and poverty. In rural areas, the lack of adequate safe water and sanitary infrastructures leaves millions with doubtful water quality, increasing the harshness of daily life. In this paper, a pilot study was conducted during the wet season on Bolama Island (Guinea-Bissau, West Africa), a UNESCO Man and the Biosphere Reserve. Twenty-eight shallow wells, supplying water to most of the population, were sampled for microbiological, physical and chemical water quality characteristics. A ten-parameter water quality index (WQI) adapted to tropical conditions was applied to compare the different wells. About 79% of the wells showed moderate to heavy fecal contamination. From the surveyed parameters, it was found that chemical contamination was less important, although all samples were acidic, with the pH averaging 5.12 ± 0.08 . The WQI was $43 \pm 4\%$ (0%-worst; 100%-best quality), showing that the water from the majority of wells was polluted but should be suitable for domestic use after appropriate treatment. At the onset of the wet season, diarrhea represented 11.5% of all medical cases, 92.5% of which were children aged

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Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Health Professional

Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Quality

Climate Change and Human Health Literature Portal

Food/Water Quality: Chemical, Pathogen

Geographic Feature: ☒

resource focuses on specific type of geography

Ocean/Coastal, Rural, Tropical

Geographic Location: ☒

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Country

Other African Country: Guinea-Bissau

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Other Diarrheal Disease

Intervention: ☒

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☒

populations at particular risk or vulnerability to climate change impacts

Children, Low Socioeconomic Status

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content